

Population and Employment Forecasts 2000 - 2030

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How ARC Forecasts

Two step process

- First produce forecast for entire area (13 Counties) using IPEF model
- Disaggregate area forecast to smaller areas using DRAM/EMPAL

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Atlanta Regional Forecast Area

For regional air quality analysis, **Coweta**, **Paulding** and **Forsyth** Counties are also included in the ARC planning area (10 counties).



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Technical Advisory Group For Area Forecasts

- **Chair, Don Ratajczac**, Professor Emeritus, G. S. U.
- **Thomas D. Boston**, Professor, Ga. Inst. of Tech.
- **Richard Fritz**, Economist, Fed. Home Loan Bank
- **John Handy**, Professor, Morehouse College
- **Amy Helling**, Professor, G. S. U.
- **Alfie Meek**, Director, Gwinnett County Forecasting and Research Division
- **Gregory Miller**, Chief Economist, Suntrust Bank
- **Jeffrey A. Rosensweig**, Professor, Emory Univ.
- **David Sjoquist**, Professor, G. S. U.

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How IPEF Works

Cohort component model

- 18 5-year age groups
- Two race groups: White and other vs. Black
- Migration computed as the population movement required to balance labor force available with labor force required by the future economy

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Cohort-Component Model

Inputs

- Fertility rates, mortality rates, labor-force participation rates and household headship rates from federal sources
- Group quarters based on 2000 Census
- Full-employment unemployment rate 4.5%
- Jobs held by commuters increases from 7.0 % in 2000 to 12.5 % in 2030

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Cohort Component Module

Inputs

- Jobs per employee based on observed 2000 ratio. Assumed to increase 5 % by 2030
- Age distribution of employment-related migrants (age 54 and younger) based on net migration patterns in 1990s
- Retirement-related migration rates (aged 55 and older) assumed to remain at rates observed in 1990s

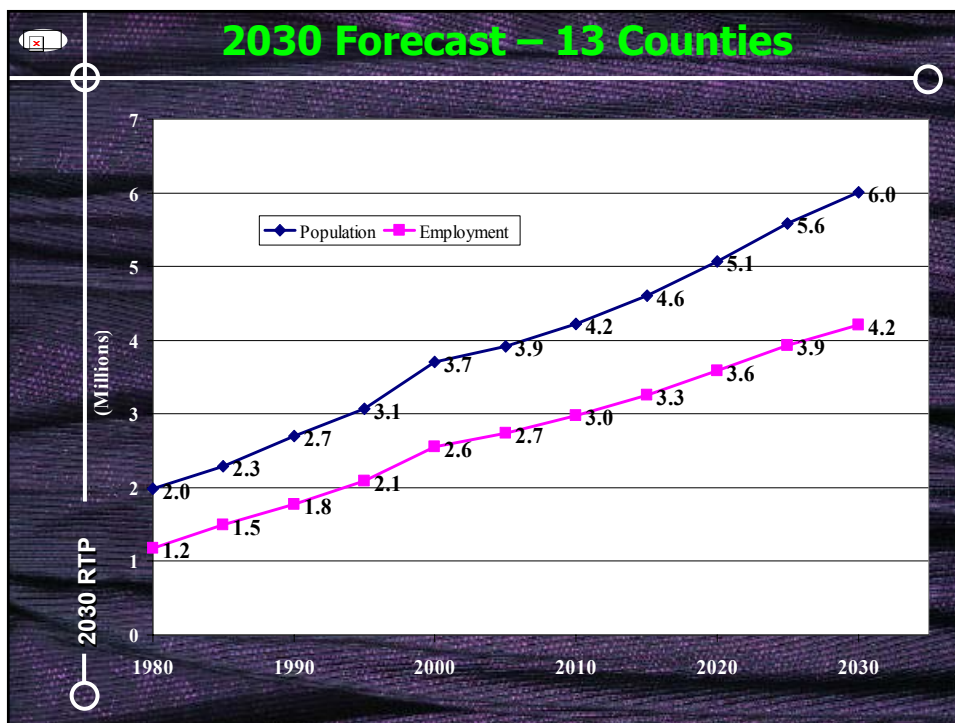
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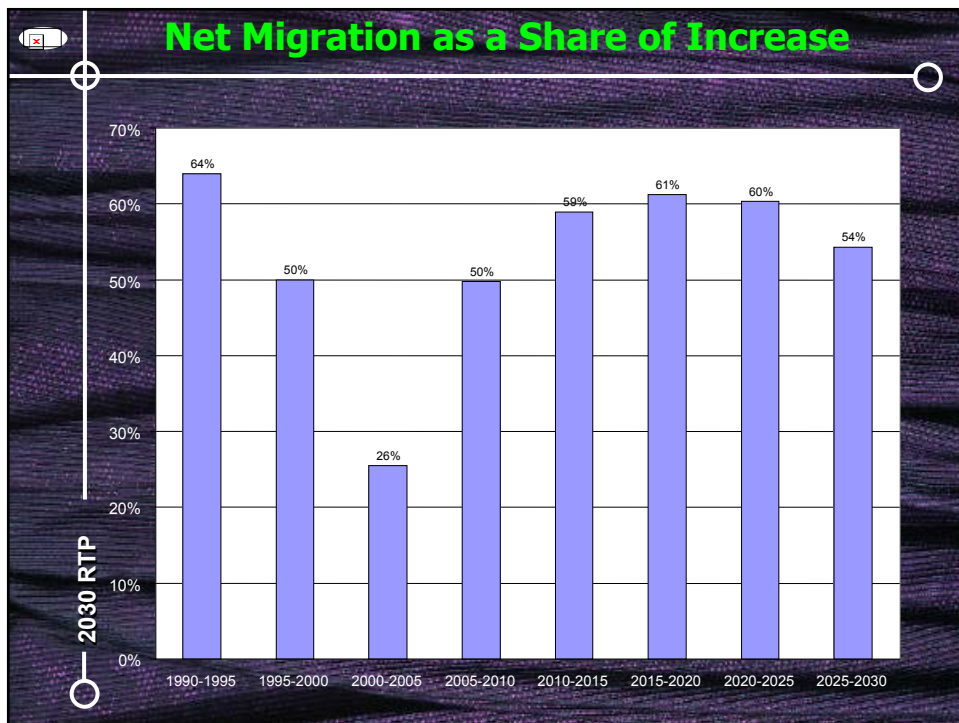
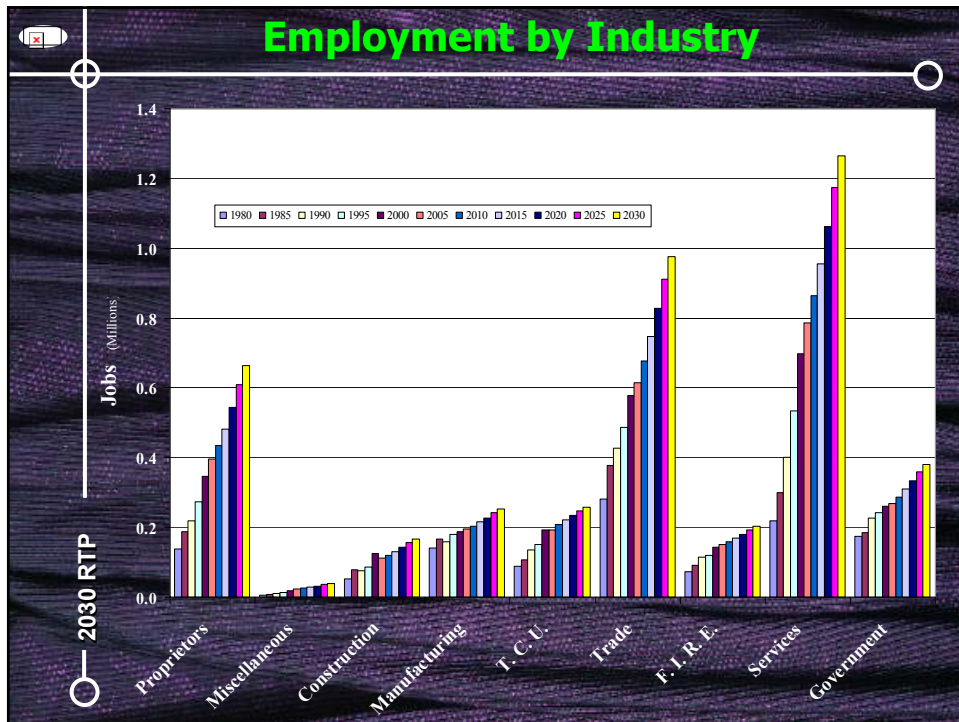
Econometric Module

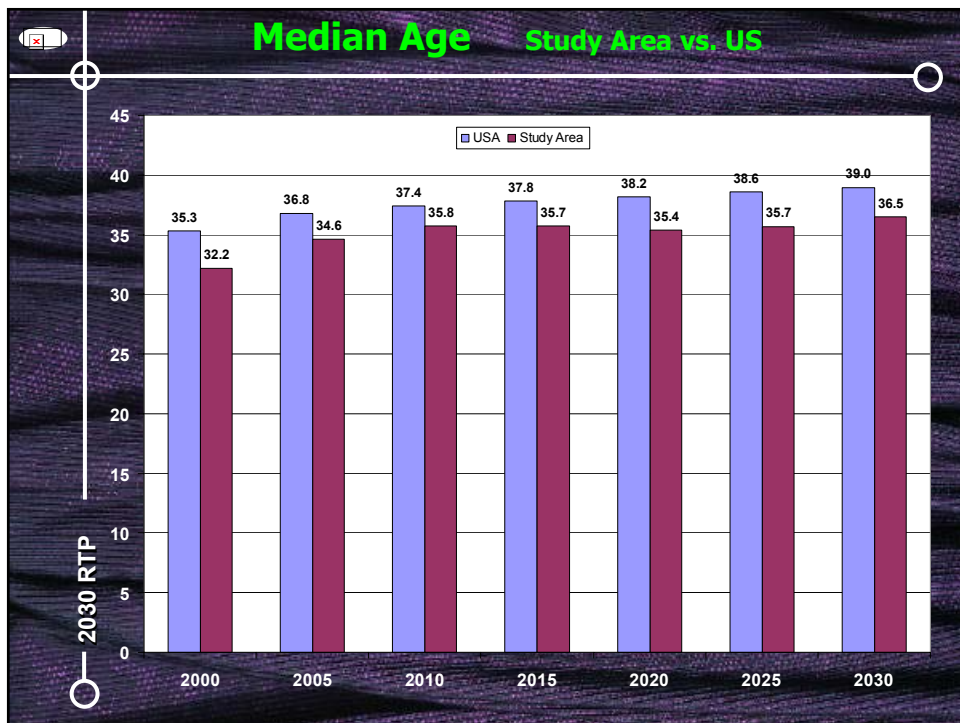
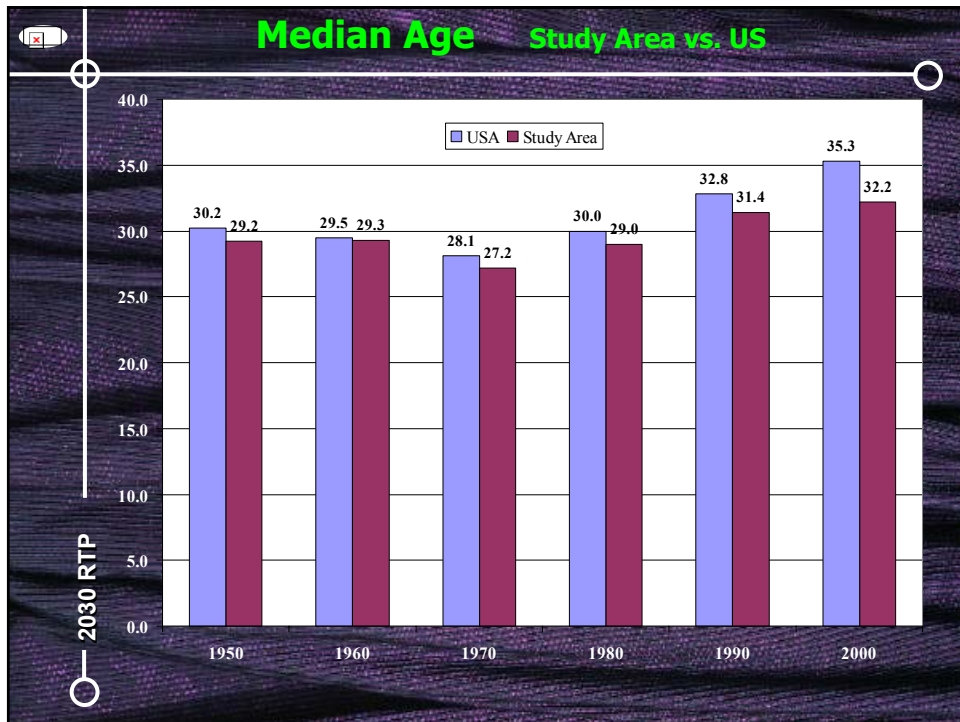
Structure

- 54 Industry Groups selected based on location quotient analysis
- Basic employment is forecast either as a time series or a function of forecast national employment in that industry
- Local-serving employment is forecast as a function of either total households or total employment
- National forecasts provided by Economy.Com

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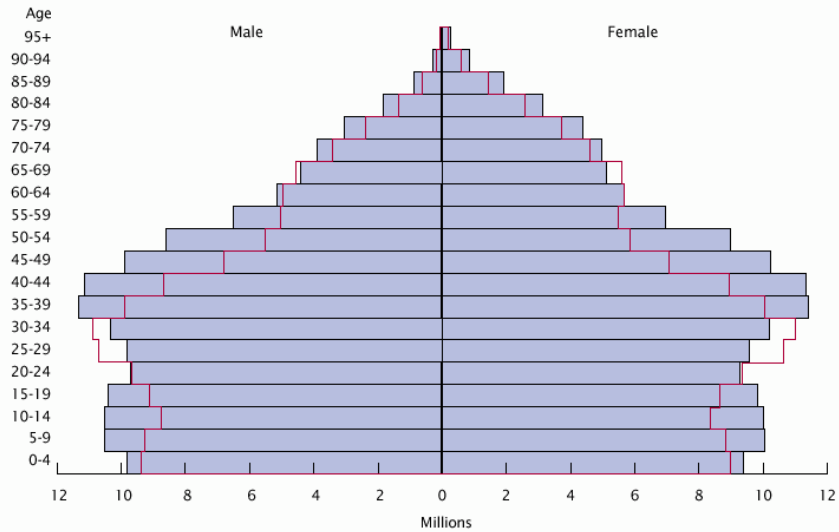




Population by Age and Sex: 1990 and 2000

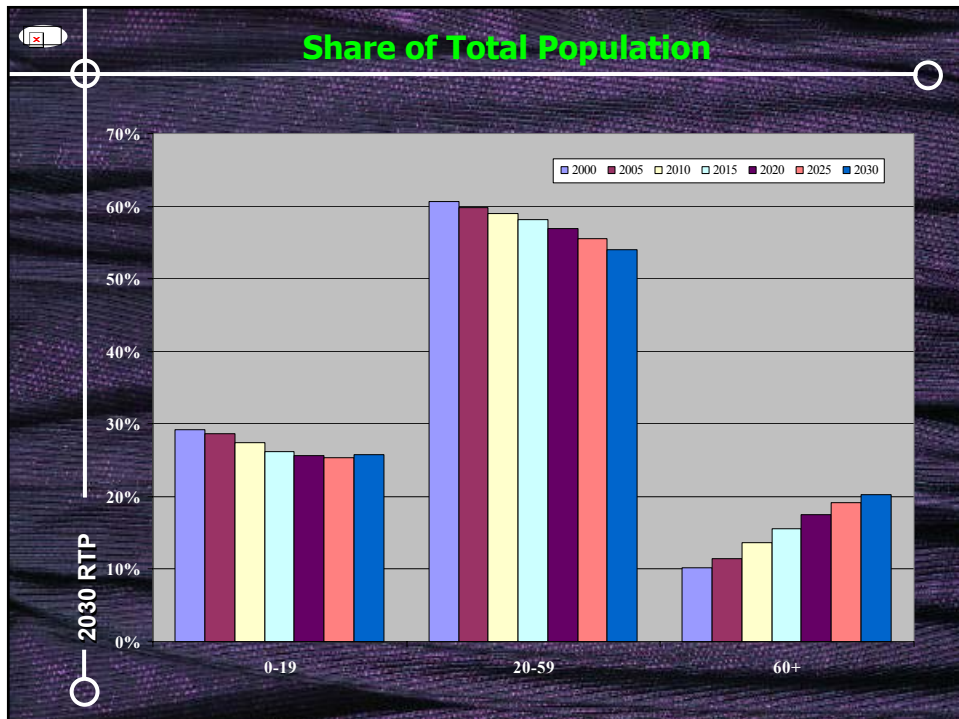
(For information on confidentiality protection, nonsampling error, and definitions, see www.census.gov/prod/cen2000/doc/sf1.pdf.)

1990
2000



Source: U.S. Census Bureau, Census 2000 Summary File 1; 1990 Census of Population, *General Population Characteristics, United States* (1990 CP-1-1).

U.S. CENSUS BUREAU



DRAM/EMPAL

Structure -- EMPAL

Forecasts employment location based on:

- Prior employment location
- Prior population location
- Employment attractiveness
- Travel cost

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DRAM/EMPAL

Structure -- DRAM

Forecasts household location based on:


- Prior employment location
- Prior population location
- Land use
- Household-income distribution
- Travel cost

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Structure -- ARC Model

- 2030 forecasts will be benchmarked to 2000 data – recalibration now in process
- Six income groups
- Eight Employment groups (SIC MIG's)
- 13 counties
- 589 zones (Census 2000 tracts)
- 1683 traffic analysis zones


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Process

- Iterative process – 5-year cycles
- D/E forecasts of population and employment are primary inputs to the travel demand model
- Composite travel times from the travel demand model are primary inputs to D/E
- Results are reviewed and policy constraints applied as necessary for each iteration

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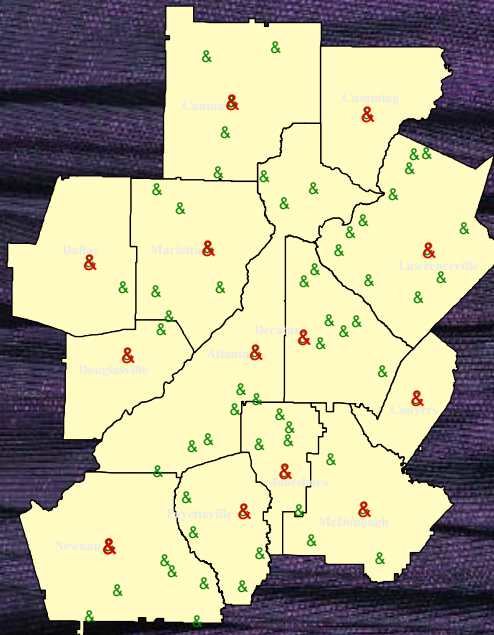
DRAM/EMPAL

Policy Constraints

- Developed in joint effort involving ARC's Land Use, Transportation planning and Research Divisions
- Considers local input
- Constraints are defined before small-area forecasts are produced
- Examples

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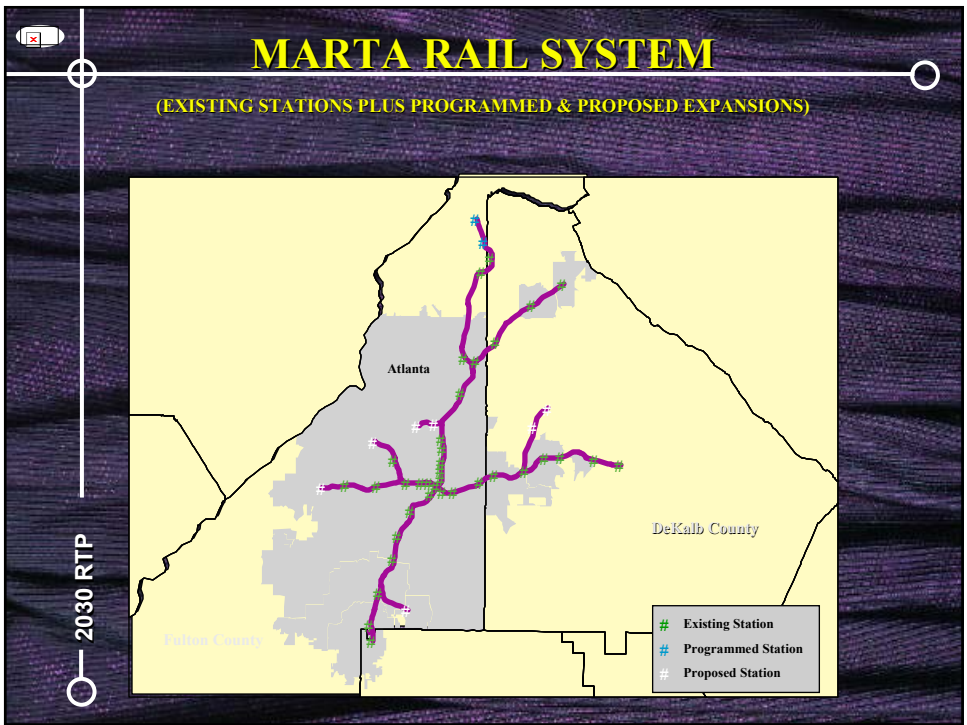
CITY AND TOWN CENTERS

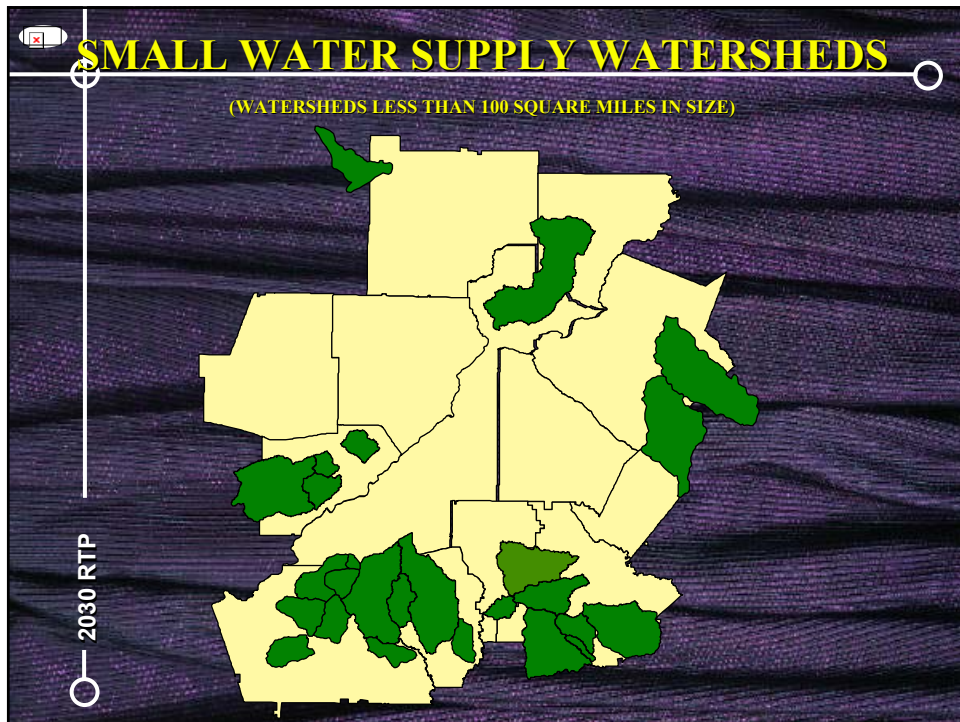


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(EXISTING STATIONS PLUS PROGRAMMED & PROPOSED EXPANSIONS)







Local Input

- Held meetings in each county to explain the planning process and solicit input
- Prepared and distributed "Aspiration Forecasts" for 2030 and requested comments from local governments
- Met with local government that did not provide comments
- Comparing local forecasts with aspirations forecast


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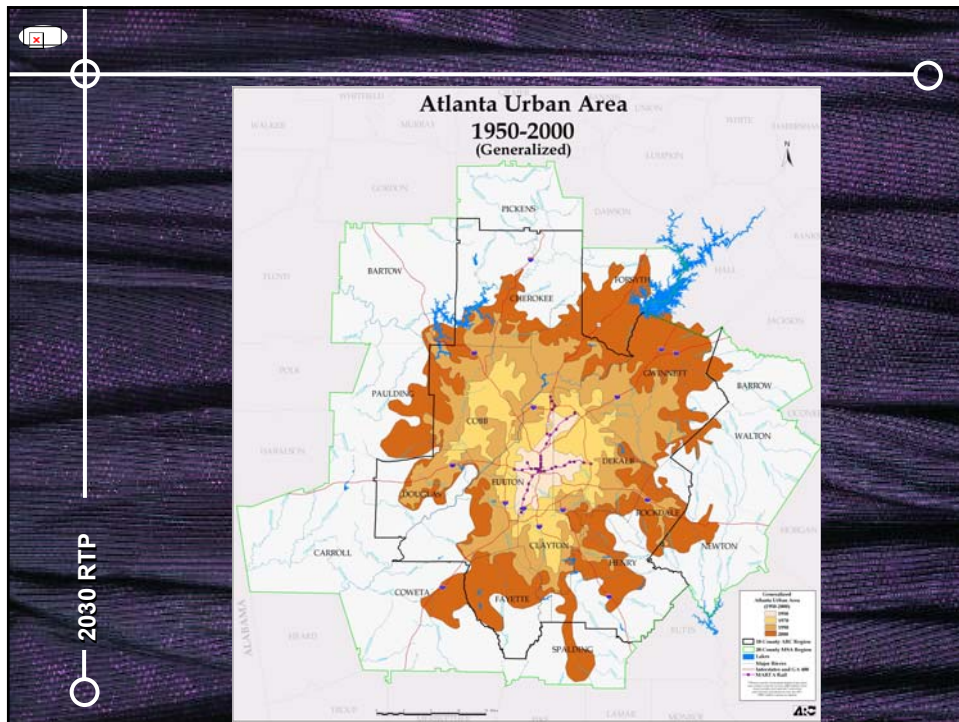


Zonal Allocation Procedure

- Divides tract forecasts among traffic analysis zones (geography used in travel demand model)
- First distributes changes in land use
- If less than 90% of tract is developed, half the change in population or employment is distributed based on change in land use and half based on existing distribution
- If more than 90% of tract is developed, distribution is based entirely on existing distribution

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Looking Ahead

Expansion of planning area

- Urbanized area now touches 19 counties, one of which is a separate MPO
- Expansion of Air-Quality Nonattainment area(s) expected
- Expansion of ARC membership to include these counties is unlikely

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